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COMMERCIAL FERTILIZERS

COMPLETE REPORT

FOR

1909

BY B. H. HITE AND F. B. KUNST

[The Bulletins and Reports of this Station will be mailed free to any citizen of West Virginia upon written application. Address Director of Agricultural Experiment Station, Morgantown, W. Va.]

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Commercial Fertilizers

Complete Report for 1909 Bulletin 125

This Report shows that the fertilizer law of this State is doing everything it was intended to do. Failures to provide the quantity or quality of constituents guaranteed are few. With few exceptions farmers are getting just what the tags tell them they are getting and this is about all that anyone could tell and is certainly as much as any one needs to know in order to purchase fertilizers intelligently. If anybody insists upon purchasing inferior fertilizers, with a sworn statement as to their inferiority pinned all over them by the parties who made them, it is a sad case, of course, but it is beyond the reach of fertilizer legislation.

No one should ever buy a fertilizer without noting carefully the materials from which it is made, for these tell the story so far as quality is concerned and the quality may be a matter of far greater concern than the quantity. The difference between the best of fertilizers and those that are worthless, or worse, may be solely a matter of the materials used. The materials from which every constituent is derived are stated on the tags.

Many persons with the best of motives have urged upon farmers the advisability of purchasing the materials and mixing the fertilizers on the farm. This, at best, is a tedious and laborious operation with the odds always against as good a product as would and should have been prepared in a modern factory, but it is the only way to be certain as to the composition of the fertilizers where the statutes are silent as to the materials from which the various constituents are derived. In this and a

number of States requiring a disclosure under oath of the materials used there is little need for "home mixing." The purchaser can usually find among the fertilizers regularly on sale the sort of mixture he wants and he can find on the tags attached to each package as much information as to the composition of the fertilizer as he would have if he had bought the materials and mixed them himself. It ought not to be necessary to add "home mixing" to the already long list of farm labors and it is not necessary where the materials used are known.

Almost every year since the present law of this State went into effect, some other State has either adopted essentially the same provisions or has manifestly done the best it could under the circumstances. During the past year Canada passed a law requiring the same disclosures as to the materials used. It would seem that the necessity for such requirements is appreciated outside of West Virginia, in fact there is no longer very much occasion for doubt as to the sort of legislation that will prevail wherever the farmers get what they want. Farmers are going to know what is in the stuff for which they are exchanging so many millions of cold, hard cash. They have every right to know. There is no other way to know. Fertilizer laws in West Virginia, California, Kansas, Canada, etc., provide this information. These laws simply say to the manufacturer and his agents "State what you are going to sell and sell what you state." Certainly nothing could be much simpler or more nearly fair.

What the purchaser is to do with his fertilizers is, of course, another matter, but it is a matter of so much concern to both makers and users of fertilizers that any good suggestions are always in order.

There is reason to doubt whether half of the fertilizers shipped into this State are really used to the very best advantage. This is no fault of the statute or its enforcement; nor is it the fault of the manufacturers whose duty is done when they provide the thing they said they would provide. The

trouble is usually a matter of the conditions under which the fertilizers are used.

The soil work of this Experiment Station shows that large areas of the soils of this State are sour, many of them very sour indeed. These sour soils are not confined to any one section but are to be found all over the State. No fertilizer can have a fair chance on such soils. Farming soils that are in such condition is like working a sick horse; and just about as profitable. Many farmers who have made some little effort to build up these sour soils have been surprised to note what the same fertilizers on the same old fields would do.

Lime is of course the remedy for acidity in soils but lime alone will not build up a sour soil. Almost without exception the sour soils of this State are in need of readily decomposable vegetable matter. Lime and the habit of turning something under is what these sour soils need.

Stable manure may of course be used to supply the vegetable matter, but soil acidity strikes first at the grasses and a sour farm is not likely to produce enough manure to start the work of replenishing the soil's supply of vegetable matter. Green manuring is the quickest, easiest, cheapest and most satisfactory way.

The first problem in green manuring is to get a green crop. Many farmers, when urged to turn something under have replied that if they could grow a crop worth turning under they would have less interest in sour soils or the remedies for them. And just here is the first great opportunity for commercial fertilizers. This is not saying that there are no other uses for commercial fertilizers. Such a statement would be rash indeed. But on the sour soils of this State commercial fertilizers should be used first to grow the green manures. Nobody ever used a commercial fertilizer to better purpose.

But it is one thing to persuade the owner of a sour soil to apply the lime and with the aid of commercial fertilizers to grow the green crop; its another thing to get him to turn it under. To turn under a green crop that is really worth turning under

requires more faith in the soil than experience with a sour soil is likely to provide. Unfortunately the experience of the owners of these soils does not as a rule include the period when lime and vegetable matter were not deficient; otherwise it would seem there ought to be very little reluctance to restore such conditions. Be this as it may the owners always believe that their sour soils are simply "worn out," and that if any thing is ever to be gotten out of them that it will have to be put into them; and inasmuch as a heavy green crop is as much as they expect to get out of such soils they see little reason for putting it back into the soil.

The trouble with all of these "worn out" notions is that they ignore the enormous stores of dormant plant food in the mineral particles of the soil, and the ability of decomposing vegetable matter to draw upon these dormant supplies. It is frankly conceded that a very little experience with a sour soil might go a long way in undermining one's faith in such soils as a practical source of plant food, but so long as the vegetable matter is deficient nothing better need be expected as the soil is helpless to draw upon its "inert" stores. If any one doubts the existence of such inert stores or the ability of decomposing vegetable matter to render them available, he has but to recall the effect of stable manure which he has used many times (though not many enough) on these same sour soils. The "lasting effects" so highly prized must be very largely due to plant food not provided directly in the manure. As a matter of fact these inert mineral stores so long ignored and almost forgotten have been responding, all along, and promptly enough to anything suggesting a return to normal conditions, and it might be worth while to see what these soils would do with something like a normal supply of vegetable matter.

In efforts to discredit commercial fertilizers the fact that they provide no "lasting effects" is often mentioned. This is another way of saying that they contain no vegetable matter or other humus forming materials and this is fortunate indeed for if there is anything that a farmer ought not to have to buy

and haul to his fields it is just this sort of materials. But commercial fertilizers do contain in concentrated and quickly available forms the materials that will enable even the poorest soils to grow such quantities of vegetable matter and "lasting effects" as would otherwise be simply out of the question, thus providing an easy and comparatively quick way to reclaim our sour soils. This is the first splendid opportunity for commercial fertilizers in this State, and for this purpose alone, this State could well afford to use many times the quantity now used for all purposes.

It has been stated that lime alone will not build up a sour soil. It should not be forgotten that on sour soils vegetable matter without the lime is just as helpless. There can be no doubt as to the ability of lime and green manuring to wonderfully improve such soils. The only trouble is to get the lime and the green manures into these soils and this would be easy enough and would be done promptly enough if only the owners could be convinced that acidity and the lack of vegetable matter is indeed the fundamental trouble. They are inclined to regard so much "acidity" as a fad rather than a fact and to account for the lack of productiveness by assuming that these soils are simply "worn out." They certainly behave like they were worn out, and, too often the owner knows that if they are not worn out, then in all good conscience they ought to be and to be told that they may be so easily improved seems too good to be true. It is not the sort of news he has been accustomed to hear in regard to such soils.

Humus itself is essentially a sour material. Normal soils contain large quantities of humus, but they are not sour because they always contain enough lime to unite with the humus and so keep the soil sweet. Lime, as it exists in the soil, can be dissolved by water containing carbonic acid. When vegetable matter decomposes in the soil, carbonic acid is formed and absorbed by the soil water, so there is a tendency, always, for lime to be leached out of the soil. As an old saying puts it, "lime sinks in the soil." In a state of nature the soil is always covered

with plants of some kind,—always every where penetrated by roots some of which extend many feet into the soil and which pick up the lime that would otherwise get away and carry it to the surface. That is why, in new lands, the surface soil is usually rich in lime. That is why new lands are not sour. When such conditions are replaced by prevailing agricultural practices with their long periods of enforced idleness in the soil, with no living root of any sort to pick up the lime, (unless some weed should insist upon doing its part) it is easy enough to see how the lime can and must get away, and that a time must come when there will not be enough lime to keep the soil sweet. While we have been bemoaning the disappearance of the humus, which could be seen in the change in color, the lime, which we could not see has been even more rapidly getting away. It must be put back.

There is absolutely nothing to be gained by putting off the application of lime to these sour soils. Normal returns are simply out of the question until a normal lime content is provided.

There is nothing to be gained by using ground lime stone instead of the well known burnt lime. As a matter of fact the burnt lime acts more promptly and pound for pound is nearly twice as efficient,—cutting freight bills in two. When the burnt lime is applied it takes up carbonic acid to form the carbonate of lime, which is the material of which the lime stone is composed. The burnt lime has an advantage in that a much finer material is produced by slacking than is possible by grinding the lime rock. Then again the burnt lime being soluble for a time can soak through the soil, thoroughly incorporating itself with the soil. If the burnt lime cannot be had, then marl or ground lime stone or ground oyster shells or any other form of lime (carbonate) should be used.

No one should be afraid to use the burnt lime nor should any one pay double freight bills on the ground lime stone because somebody tells him that the burnt lime will “burn up” the humus. As a matter of fact either form of lime will (as popularly understood) burn up humus. But that is what

humus is for;—to “burn up.” It is the humus that won’t burn up that gets sour and makes trouble.

Humus incidentally performs so many other valuable functions in the soil that we sometimes seem to forget that its one great work is to burn up. In burning up it exerts a more powerful solvent action than any other known agent on the soil’s dormant stores of mineral plant food. The only hope for these sour soils is that humus may again be made to burn in them as in the virgin soil.

Strictly speaking it is not the lime but the soil bacteria that burn up the humus and so far as any one has ever been able to suggest these were put into the soil for no other purpose than to “burn up” humus. It so happens that these tiny organisms, like many larger plants can not thrive in a sour soil. The decomposition of the vegetable matter is checked,—with it the ability of the soil to draw upon its own dormant supplies and it is easy to understand why sour soils are always believed to be “worn out.” Lime corrects the sourness and so restores the conditions under which the bacteria can proceed with their work.

So long as there is a normal supply of lime in the soil, so that the soil bacteria can do the work for which they were put into the soil, the amount of work they do is determined by the amount of vegetable matter they can find to work on. The virgin soils and new lands rich in vegetable matter were literally alive with bacteria, and the “burning” or decomposition of humus was greater than it has been since. We wish such conditions might have continued and the mistake was in not making some reasonable effort to keep up the supply of humus. This might have been done, and the awful losses by leaching prevented, if vegetable matter of some sort had been kept growing during the long periods each year that these lands have been allowed to remain with no crop of any kind on them. And it might just as well be understood that any serious endeavor to restore, much less to maintain a normal humus supply will find abundant use for all such idle periods. The

“burning” or decomposition of vegetable matter provides a way to draw upon the soil’s immense stores of dormant plant food but it was manifestly not the intention that these stores should be made available only to be leached from idle lands. Any serious attempt to provide the necessary vegetable matter enforces the practices that prevent the losses.

Farmers suspecting their soils to be sour should send samples of such soils to the Experiment Station. A card will bring instructions for taking the samples and the examination will be made gladly and without any charge whatever. The Station is doing its part in reclaiming these sour soils. The work, or any part of the work is worthy of the best efforts of any man. It means an increase of millions in the productiveness of our lands and everything that goes with such an increase.

Results of Inspection of Commercial Fertilizers for 1909

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY

*No. 2 Rector St., New York, 741 Equitable Building,
Baltimore, Md., and Cleveland, Ohio.*

6258. *Big Crop Phosphate.* W. S. Corrothers, Agent, Little Falls, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; potash 5. Phosphoric acid from dissolved phosphate rock; potash from manure salt. Found, phosphoric acid, soluble 4.58; reverted, 3.74; insoluble, 0.61; total 8.23; available 8.32; potash 5.33. Chlorine 2.7.

Remark: Source of potash equivalent to kainit.

6264. *A Ground Bone,* Johnson Implement Co., agents, Parkersburg, W. Va. Guarantee: Phosphoric acid, total 25; nitrogen 1.23. Phosphoric Acid from Bone; nitrogen from bone. Found: phosphoric acid, total 24.72; nitrogen, 1.55. Availability of nitrogen, 88.

6305. *Pure Ground Bone.* W. S. Stout, Agent, Harrisville, W. Va. Guarantee: Phosphoric acid, total, 20.60; nitrogen, 3.30. Phosphoric acid from animal bone; nitrogen from animal bone. Found: Phosphoric acid, total, 20.56; nitrogen, 3.09; availability of nitrogen, 67.

Remark: Nitrogen, low.

6329. *Fine Ground Bone.* T. B. Drummond & Co., Agents, Buckhannon, W. Va. Guarantee: Phosphoric acid, total 22.80; nitrogen, 2.47. Phosphoric acid from animal bone; nitrogen from animal bone. Found: phosphoric acid, total, 23.48; nitrogen, 2.68; availability of nitrogen, 92.

6371. *Fine Ground Bone*, Siever Hardware Co., Agent, Keyser, W. Va. Guarantee: (as above.) Found: Phosphoric acid, total 23.87; nitrogen 2.57; availability of nitrogen 93.

6429. *Bone Meal*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, total, 13.75; nitrogen, 1.65. Phosphoric acid from animal bone; nitrogen from animal bone. Found: Phosphoric acid, total, 17.27; nitrogen 2; availability of nitrogen 90.

6266. *The A. A. C. Co's. Special Potash Mixture*, Johnson Implement Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, soluble 3.50; reverted, 1.50; insoluble, 1.50; total, 6.50; available, 5; potash 10; nitrogen 0.82. Phosphoric acid 4-5 phosphate rock, 1-5 bone tankage; nitrogen 6-7 bone tankage, 1-7 garbage tankage; potash from muriate of potash. Found: phosphoric acid, soluble 2.46; reverted, 3.28; insoluble 1.27; total 7.01; available 5.74; nitrogen 0.95; potash, 10.92; availability of nitrogen 83; chlorine 0.9.

6313. *High Grade Dissolved Bone and Potash*, A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 5. Phosphoric acid from dissolved phosphate rock; potash 1-4 to 3-4 from muriate of potash, 1-4 to 3-4 from manure salts. Found, phosphoric acid, soluble, 7.33; reverted, 4.31; insoluble 0.37; total 12.01; available 11.64; potash 3.37; chlorine 2.3.

Remark: Potash low. Source of potash equivalent to manure salt.

6302. *Wheat, Corn and Grass Mixture*, J. L. Woodyard, Agent, Pruntytown, W. Va. Guarantee: Phosphoric acid, soluble, 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.41; potash 2. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to 1-4 garbage tankage, 3-4 to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 3.47; reverted 4.33; insoluble 0.96; total 8.76; available 7.80; nitrogen 0.47; potash 2; availability of nitrogen 72; chlorine 5.2.

Remark: Chlorine excessive.

6316. *A. A. C. Co's. Corn, Oats and Buckwheat Fertilizer*, W. S. Stout, Agent, Harrisville, W. Va. Guarantee: Phosphoric acid, soluble, 4; reverted 2; insoluble 1; total 7; available 6; potash 3; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble, 2.07; reverted, 4.26; insoluble, 0.35; total, 6.68; available, 6.33; potash 3.32; chlorine 5.1.

Remark: Chlorine excessive.

6293. *Superphosphate*, Marlinton Supply Co., Agent, Marlinton, W. Va. Guarantee: Phosphoric acid, soluble 14; reverted 2; insoluble 1; total 17; available 16; Phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 15.15; reverted 2.55; insoluble 0.35; total 18.05; available 17.70.

6338. *Bone Potash Fertilizer*, G. T. Howell, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 6, reverted, 2; insoluble, 1; total 9; available 8; potash 5. Phosphoric acid from dissolved phosphate rock; potash from manure salt. Found: Phosphoric acid, soluble, 3.53; reverted, 4.35; insoluble, 0.69; total, 8.57; available 7.88; potash 4.92; chlorine 2.9.

Remark: Source of potash equivalent to kainit.

6400. *Genuine German Kainit*, R. Hunter, Agent, Berkeley Springs, W. Va. Guarantee: Potash, 12. Potash from Kainit. Found: Potash, 11.86; chlorine 2.7.

6452. *A. A. C. Co's. Dissolved Bone and Potash*, A. P. Russell & Co., Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 2; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 5.60; reverted, 3.28; insoluble, 0.34; total, 9.22; available, 8.88; potash 5.90; chlorine 3.1.

Remark: Chlorine excessive.

6342. *Gem. Alkaline Phosphate*, T. B. Drummond & Co., Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble, 4; reverted, 2; insoluble 1; total 7; available 6; potash 3. Phosphoric acid from dissolved phosphate rock; potash from

kainit. Found: Phosphoric acid, soluble 1.69; reverted 4.45; insoluble 0.49; total 6.63; available 6.14; potash 3.85; Chlorine 4.3.

Remark: Chlorine excessive.

6265. *Bradley's Corn and Wheat Phosphate*, Johnson Implement Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, soluble, 5.50; reverted 2.50; insoluble 1.50; total 9.50; available 8; potash 2; nitrogen 0.82; Phosphoric Acid $\frac{4}{5}$; phosphate rock, $\frac{1}{5}$ bone tankage; nitrogen 6-7 bone tankage; 1-7 garbage tankage, potash from muriate of potash. Found: Phosphoric acid, soluble, 5.18; reverted 3.48; insoluble 1.47; total 10.13; available 8.66; nitrogen 1.01; potash 2.33; availability of nitrogen 70; chlorine 1.

6390. *Bradley's Niagara Phosphate*, Thomas Nuzum, Agent, Grafton, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1; total 8; available 7; nitrogen 0.82; potash 1; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble, 3.99; reverted 4.04; insoluble 0.96; total 8.99; available 8.03; nitrogen 1.05; potash 1.26; availability of nitrogen 77; chlorine 7.3.

Remark: Chlorine excessive.

6391. *Bradley's Bean and Potato Phosphate*, Thomas Nuzum, Agent, Grafton, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 4; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage $\frac{3}{4}$ to 9-10 animal tankage; potash from $\frac{1}{4}$ to $\frac{3}{4}$ from manure salt and $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble, 5.82; reverted 2.11; insoluble 1.20; total 9.13; available 7.93; nitrogen 0.96; potash 4.15; availability of nitrogen 78; chlorine 2.2.

6263. *Bradley's Justice Brand Phosphate*, Johnson Implement Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, soluble 9; reverted 3; insoluble 1.50; total 13.50;

available, 12. Phosphoric acid from phosphate rock. Found: Phosphoric acid, soluble, 6.37; reverted 6.07; insoluble 2.96; total 15.40; available 12.44.

6310. *Canton Chemical Potato and Tobacco Manure*, W. S. Stout, Agent, Harrisville, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; nitrogen 1.24; potash 5. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage and $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salt and $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble, 4.87; reverted 3.58; insoluble 3.15; total 11.60; available 8.45; nitrogen 1.32; potash 2.07; availability of nitrogen 87; chlorine 1.9.

Remark: Potash low. *

6363. *Canton Chemical Harrow Brand Crop Grower*, J. M. Haggerty, Agent, Farmington, W. Va. Guarantee: Phosphoric acid, soluble, 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 1. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage and $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble, 5.42; reverted 3.61; insoluble 1.18; total 10.21; available 9.03; nitrogen 1; potash 1.37; availability of nitrogen 80; chlorine 6.

Remark: Chlorine excessive.

6364. *Canton C. C. C. Special Compound*, J. M. Haggerty, Agent, Farmington, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 2.06; potash 6; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ from sulphate of ammonia, 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{1}{4}$ to $\frac{3}{4}$ from animal tankage; potash from muriate of potash. Found: Phosphoric acid, soluble 4.54; reverted 3.88; insoluble 1.60; total 10.02; available 8.42; nitrogen 1.96; potash 6.10; availability of nitrogen 89; chlorine 1.2.

6366. *Canton Chemical Baker's Special Wheat, Corn and Grass Mixture*, Siever Hardware Company, Agent, Keyser, W. Va. Guarantee: Soluble Phosphate acid, 7; reverted 2; insolu-

ble 1; total 10; available 9; nitrogen, 0.82; potash 2; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ from garbage tankage, $\frac{3}{4}$ to 9-10 from animal tankage; potash from kainit. Found: Phosphoric acid, soluble, 5.46; reverted, 3.64; insoluble 1.30; total 10.40; available 9.10; nitrogen 1.03; potash 2.21; availability of nitrogen 80; chlorine 4.5.

Remark: Chlorine excessive.

6368. *Canton Chemical Soluble Bone and Potash*, J. M. Haggerty, Agent, Farmington, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 5.28; reverted 4.29; insoluble 0.79; total 10.36; available 9.57; potash 2.24; chlorine 3.7.

Remark: Phosphoric acid low. Chlorine excessive.

6369. *Canton Chemical Baker's Dissolved S. C. Bone*, J. M. Haggerty, Agent, Farmington, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; Phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 10.95; reverted 4.28; insoluble 0.81; total 16.04; available 15.23.

6370. *Canton Chemical Game Guano*, J. M. Haggerty, Agent, Farmington, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 2. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble, 4.36; reverted, 3.65; insoluble, 1.43; total 9.44; available 8.01; nitrogen 1.73; potash 2.12; availability of nitrogen 84; chlorine 3.3.

Remark: Chlorine excessive.

6428. *Canton Chemical Eagle Phosphate*, Washington, Alexander & Cooke, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1; total 8; available 7; nitrogen 0.82; potash 1. Phosphoric acid from dis-

solved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: phosphoric acid, soluble, 4.60; reverted 3.03; insoluble 0.92; total 8.55; available 7.63; nitrogen 0.85; potash 1.27; availability of nitrogen 76; chlorine 7.9.

Remark: Chlorine excessive.

6347. *Cleveland Dryer XXX Phosphate*, Bishop & Barbe, Agent, Jane Lew, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble, 11.96; reverted, 3.52; insoluble 0.65; total 16.13; available 15.48.

6365. *Cleveland Dryer Forest City Buckeye*, Bishop & Barbe, Agent, Jane Lew, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1; total 10; available 9; nitrogen 2.47; potash 2; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ from animal tankage, 1-10 to $\frac{1}{4}$ sulphate of ammonia, 1-10 to $\frac{1}{4}$ fish; potash $\frac{1}{4}$ to $\frac{3}{4}$ from manure salt, $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble, 5.18; reverted, 3.70; insoluble 2.01; total 10.89; available 8.88; nitrogen 2.47; potash 2.33; availability of nitrogen 90; chlorine 1.8.

6450. *Cleveland Dryer Horsehead Phosphate and Potash*, Bishop & Barbe, Agent, Jane Lew, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2. Phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 7.37; reverted 3.41; insoluble 0.41; total 11.19; available 10.78; potash 3.08; chlorine 4.7.

Remark: Chlorine excessive.

6451. *Cleveland Dryer Horsehead Phosphate*, Chester Hardware Co., Agent, Chester, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10. Phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 7.25; reverted, 5.43; insoluble 3.43; total 16.11; available 12.68.

6255. *Detrick's Quickstep Bone Phosphate for Potatoes and Tobacco*, W. S. Corrothers, Agent, Little Falls, W. Va. Guarantee: Phosphoric Acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 2.47; potash 4; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ animal tankage, 1-10 to $\frac{1}{4}$ sulphate of ammonia, 1-10 to $\frac{1}{4}$ fish; potash from muriate of potash. Found: Phosphoric acid, soluble 5.54; reverted 3.24; insoluble 1.61; total 10.39; available 8.78; nitrogen 2.56; potash 3.82; availability of nitrogen 92; chlorine 1.1.

6256. *Detrick's Soluble Bone Phosphate and Potash*, W. S. Corrothers, Agent, Little Falls, W. Va. Guarantee: Phosphoric Acid, soluble 8; reverted 8; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 6.35; reverted 3.96; insoluble 0.79; total 11.10; available 10.33; potash 2.56; chlorine 3.4.

Remark: Chlorine excessive.

6257. *Detrick's Corn and Oats Fertilizer*, W. S. Corrothers, Agent, Little Falls, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1; total 10; available 9; nitrogen 0.82; potash 3. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salt and $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 6.98; reverted 2.54; insoluble 1.19; total 10.71; available 9.52; nitrogen 0.88; potash 3.72; availability of nitrogen 75; chlorine 3.1.

Remark: Chlorine excessive.

6311. *Detrick's Dissolved S. C. Bone*, G. T. Howell, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 11.73; reverted 3.49; insoluble 0.73; total 15.95; available 15.22.

6406. *Detrick's Kangaroo Complete Compound*, W. H. McCallister, Agent, Hurricane, W. Va. Guarantee: Phosphoric

acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 3; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ from manure salt, $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 3.79; reverted 3.79; insoluble 2.12; total 10.70; available 8.50; nitrogen 1.91; potash 3.52; availability of nitrogen 85; chlorine 0.8.

6315. *Great Eastern Japanese Wheat Grower*, A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble, 4; reverted 2; insoluble 1; total 7; available 6; potash 3; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 6.36; reverted 4.14; insoluble 0.56; total 6.74; available 6.18; potash 3.42; chlorine 5.1.

Remark: Chlorine excessive.

6319. *Great Eastern High Grade Bone and Potash*, A. G. Chrislip, Agent, Keyser, W. Va. Guarantee: Phosphoric acid, soluble, 8; reverted 2; insoluble 1; total 11; available 10; potash 5; phosphoric acid from dissolved phosphate rock; potash $\frac{1}{4}$ to $\frac{3}{4}$ from muriate of potash, $\frac{1}{4}$ to $\frac{3}{4}$ manure salt. Found: Phosphoric acid, soluble 5.94; reverted 3.93; insoluble 0.67; total 10.54; available 9.87; potash 5.32; chlorine 2.6.

Remark: Chlorine excessive.

6321. *Great Eastern Soluble Bone and Potash*, A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble, 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 6.36; reverted 4.14; insoluble 0.78; total 11.18; available 10.40; potash 2.22; chlorine 4.1.

Remark: Chlorine excessive.

6330. *Great Eastern English Wheat Grower*, M. C. Jackson, Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble, 6; reverted 2; insoluble 1; total 9; available 8; nitrogen .82; potash 2; phosphoric acid from dissolved phosphate

rock and dissolved animal bone; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 5.18; reverted, 3.27; insoluble 1.16; total 9.61; available 8.45; nitrogen 1.12; potash 2.25; availability of nitrogen 82; chlorine 3.8.

Remark: Chlorine excessive.

6332. *Great Eastern Vegetable, Vine and Tobacco*, M. C. Jackson, Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 2.05; potash 3; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ animal tankage, 1-10 to $\frac{1}{4}$ fish; $\frac{1}{4}$ to 1-10 sulphate of ammonia; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salts; $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 5.80; reverted 2.78; insoluble 1.33; total 9.91; available 7.58; nitrogen 2.10; potash 3.20; availability of nitrogen 91; chlorine 1.

Remark: Phosphoric acid low.

6367. *Great Eastern Corn Fertilizer*, Farmington Mill Co., Agent, Farmington, W. Va. Guarantee: Phosphoric acid, soluble, 6; reverted 2; insoluble 1; total 9; available 8; nitrogen .82; potash 4; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salts, $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 4.80; reverted 3.35; insoluble 1.06; total 9.21; available 8.14; nitrogen 0.89; potash 4.39; availability of nitrogen 78; chlorine 2.2.

6274.. *Lazaretto Special Potato and Tobacco Fertilizer*, Mossman Brothers, Agent, Huntington, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen .82; potash 4; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salts and $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 4.76; reverted 4.08; insoluble 1.64; total 10.48; available 8.84; nitrogen, 0.89; potash 4.58; availability of nitrogen 76; chlorine 0.9.

6325. *Lazaretto High Grade Dissolved Bone and Potash*, A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 2; insoluble 1; total 13; available 12; potash 5; phosphoric acid from dissolved phosphate rock; potash from muriate of potash. Found: Phosphoric acid, soluble 8.53; reverted 3.47; insoluble 0.69; total 12.69; available 12; potash 5.18; chlorine 1.7.

Remark: Chlorine excessive.

6426. *Lazaretto Bone Compound*, T. B. Drummond, Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1; total 10; available 9; nitrogen 1.03; potash 3. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salts and $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 6.77; reverted 3.03; insoluble 1.43; total 11.23; available 9.80; nitrogen 1.17; potash 3.39; availability of nitrogen 76; chlorine 1.6.

6331. *Lazaretto Dissolved Bone Phosphate*, T. B. Drummond, Agent, Buckhannon, W. Va. Guaranteed: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 11.80; reverted 3.53; insoluble 0.56; total 15.89; available 15.33.

6276. *Maryland Bono Superphosphate*, J. L. Woodyard, Agent, Pruntytown, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2. Phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 6.60; reverted 3.91; insoluble 0.90; total 11.41; available 10.51; potash 2.26; chlorine 4.4.

Remark: Chlorine excessive.

6277. *Maryland Special Compound for Potatoes and Tobacco*, J. L. Woodyard, Agent, Pruntytown, W. Va. Guarantee: Phosphoric Acid: Soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 10; phosphoric acid from

dissolved animal bone and dissolved phosphate rock; nitrogen $\frac{3}{4}$ to 9-10 animal tankage, 1-10 to $\frac{1}{4}$ garbage tankage; potash from muriate of potash. Found: Phosphoric acid, soluble 5.88; reverted 2.61; insoluble 1.36; total 9.85; available 8.49; nitrogen 1.80; potash 10.75; availability of nitrogen 91; chlorine 1.

6278. *Maryland Ammoniated Bone*, J. L. Woodyard, Agent, Pruntytown, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 3. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salt and $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 6.08; reverted 2.85; insoluble 1.38; total 10.31; available 8.93; nitrogen 1.75; potash 3.23; availability of nitrogen 86; chlorine 1.8.

6447. *Maryland Tornado Fertilizer*, Leslie Hawker, Agent, Shinnston, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 2; insoluble 1; total 13; available 12; potash 5; phosphoric acid from dissolved phosphate rock; potash from muriate of potash. Found: Phosphoric acid, soluble 8.92; reverted 3.41; insoluble 0.50; total 12.83; available 12.33; potash 6.16; chlorine 1.8.

Remark: Source of potash equivalent to manure salt.

6254. *Reese's High Grade Potash Mixture*, W. S. Corrothers, Agent, Little Falls, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 2; insoluble 1; total 13; available 12; potash 5; phosphoric acid from dissolved phosphate rock; potash from muriate of potash. Found: Phosphoric acid, soluble 8.03; reverted 4.04; insoluble 0.83; total 12.90; available 12.07; potash 5.86; chlorine 1.6.

Remark: Source of potash equivalent to manure salt.

6314. *Reese's High Grade Potash Mixture*, G. T. Howell, Agent, Philippi, W. Va. Guarantee: (as above). Found: Phosphoric acid, soluble 11.22; reverted 2.10; insoluble 0.50; total 13.82; available 13.32; potash 8.25; chlorine 0.9.

6359. *Southern Fertilizer Co.'s Bone and Potash Mixture*,

E. A. Rider and W. C. Hovemale, Agents, Berkeley Springs, W. Va. Guarantee: (According to the affidavit of the Southern Fertilizing Co.) Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 3.38; reverted 4.39; insoluble 0.35; total 8.12; available 7.77; potash 2.43; chlorine 5.4.

Remark: Chlorine excessive.

6292. *Williams & Clark's Good Grower Potato Phosphate*, Marlinton Supply Co., Agent, Marlinton, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; nitrogen 1.24; potash 5; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash $\frac{1}{4}$ to $\frac{3}{4}$ manure salt, $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, soluble 3.34; reverted 3.53; insoluble 1.62; total 8.49; available 6.87; nitrogen 1.48; potash 5.12; availability of nitrogen 87; chlorine 2.7.

Remark: Source of potash equivalent to kainit.

6306. *Williams & Clark's Acorn Acid Phosphate*, A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 11.07; reverted 4.07; insoluble 0.67; total 15.81; available 15.14.

6307. *Williams & Clark's Prolific Fertilizer*, A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1; total 8; available 7; nitrogen 0.82; potash 1; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 3.33; reverted 3.49; insoluble 1.24; total 8.06; available 6.82; nitrogen 0.91; potash 1.08; availability of nitrogen 76; chlorine 7.1.

Remark: Chlorine excessive.

6320. *Williams & Clark's Dissolved Bone and Potash*,

A. G. Chrislip, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2. Phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 5.88; reverted 4.07; insoluble 0.86; total 10.81; available 9.95; potash 2.26; chlorine 4.2.

Remark: Chlorine excessive.

6427. *Williams & Clark's Royal Bone Phosphate*, Wheeling Implement & Buggy Co., Agent, Wheeling, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.03; potash 2. Phosphoric acid from dissolved animal bone and dissolved phosphate rock. Nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 6.52; reverted, 2.66; insoluble 1.88; total 11.16; available 9.28; nitrogen 97; potash 2.03; availability of nitrogen 78; chlorine 1.9.

6242. *Zell's Little Giant*, Benson Jacobs, Agent, Little Falls, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1; total 8; available 7; nitrogen 0.82; potash 1; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 3.49; reverted 3.77; insoluble 1.62; total 8.88; available 7.26; nitrogen 0.93; potash 1.30; availability of nitrogen 76; chlorine 7.

Remark: Chlorine excessive.

6285. *Zell's Economizer Phosphate*, Carmen & Liggett, Agent, Wellsburg, W. Va. Guarantee: Phosphoric Acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 2. Phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 4.57; reverted 3.75; insoluble 1.91; total 10.23; available 8.32; nitrogen 1.13; potash 2.75; availability of nitrogen 82; chlorine 1.7.

6243. *Zell's Electric Phosphate*, Benson Jacobs, Agent Little Falls, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 5.65; reverted 4.36; insoluble 0.83; total 10.84; available 10.01; potash 2.10; chlorine 3.8.

Remark: Chlorine excessive.

6308. *Zell's Dissolved Bone Phosphate*, Philippi Mill Co., Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 11.54; reverted 3.67; insoluble 0.69; total 15.90; available 15.21.

6334. *Zell's Ammoniated Bone Superphosphate*, R. Hunter, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 2; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid soluble 5.07; reverted 3.34; insoluble 1.22; total 9.63; available 8.41; nitrogen 1.63; potash 2.25; availability of nitrogen 86; chlorine 3.3.

Remark: Chlorine excessive.

6357. *Zell's Special Compound for Potatoes and Vegetables*, Parley Deberry, Agent, Terra Alta, W. Va. Guarantee: Phosphoric acid, soluble 6, reverted 2; insoluble 1; total 9; available 8; nitrogen 2.47; potash 4; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ animal tankage, 1-10 to $\frac{1}{4}$ sulphate of ammonia, 1-10 to $\frac{1}{4}$ fish; potash from muriate of potash. Found: Phosphoric acid, soluble 5.54; reverted 2.77; insoluble 1.60; total 9.91; available 8.31; nitrogen 2.47; potash 3.70; availability of nitrogen 91; chlorine 1.1.

THE ATLANTIC FERTILIZER COMPANY,

Baltimore, Md.

6443. *Jumbo Crop Grower*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; potash 5; phosphoric acid from dissolved Florida phosphate; potash $\frac{2}{3}$ from muriate, $\frac{1}{3}$ from kainit. Found: Phosphoric acid, soluble 2.58; reverted 4.43; insoluble 9.18; total 7.19; available 7.01; potash 5.67; chlorine 2.1.

Remark: Phosphoric acid low.

6444. *Atlantic Dissolved Bone Phosphate*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved Florida phosphate. Found: Phosphoric acid, soluble 8.87; reverted 7.50; insoluble 0.65; total 17.02; available 16.37.

THE ARMOUR FERTILIZER WORKS,

Baltimore, Md.

6250. *Royal Ammoniated Bone*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric Acid, soluble 6; reverted 2; insoluble 0.50; total 8.50; available 8; nitrogen 0.82; potash 4. Phosphoric acid $\frac{2}{5}$ to $\frac{3}{5}$ animal bone meal, $\frac{2}{5}$ to $\frac{3}{5}$ acid phosphate; nitrogen $\frac{1}{5}$ to $\frac{3}{5}$ animal tankage, $\frac{2}{5}$ to $\frac{4}{5}$ animal bone meal; potash $\frac{1}{3}$ to $\frac{2}{3}$ kainit, $\frac{1}{3}$ to $\frac{2}{3}$ muriate of potash. Found: Phosphoric acid, soluble 5.04; reverted 2.90; insoluble 0.58; total 8.52; available 7.94; nitrogen 0.73; potash 4.20; availability of nitrogen 73; chlorine 3.2.

Remark: Source of potash equivalent to kainit.

6344. *Royal Ammoniated Bone*, sent in for analysis by J. D. Bowman, Hoults, W. Va. Guarantee: (as above). Found: Phosphoric acid, soluble 4.87; reverted 3.26; insoluble 0.63; to-

tal 8.76; available 8.13; nitrogen 0.82; potash 4.06; availability of nitrogen 69; chlorine 2.8.

Remark: Source of potash equivalent to kainit.

6251. *Wheat, Corn and Oats, Special*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 0.50; total 7.50; available 7; nitrogen 0.82; potash 1; phosphoric acid $\frac{2}{5}$ to $\frac{3}{5}$ animal bone meal; $\frac{2}{5}$ to $\frac{3}{5}$ acid phosphate; nitrogen $\frac{2}{5}$ to $\frac{3}{5}$ animal bone meal, $\frac{2}{5}$ to $\frac{3}{5}$ animal tankage; potash from kainit. Found: Phosphoric acid, soluble, 3.98; reverted 3.32; insoluble 0.61; total 7.91; available 7.30; nitrogen 0.71; potash 1.27; availability of nitrogen 70; chlorine 3.

6252. *High Grade Potato*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 6, reverted 2; insoluble 0.50; total 8.50; available 8; nitrogen 1.65; potash 10; phosphoric acid $\frac{2}{5}$ to $\frac{3}{5}$ acid phosphate, $\frac{2}{5}$ to $\frac{3}{5}$ animal bone meal; nitrogen 1-10 to 2-10 animal bone meal, 8-10 to 9-10 animal tankage; potash $\frac{1}{5}$ to $\frac{3}{5}$ sulphate of potash; $\frac{2}{5}$ to $\frac{4}{5}$ muriate of potash. Found: Phosphoric acid, soluble 5.03; reverted 2.77; insoluble 0.86; total 8.66; available 7.80; nitrogen 1.52; potash 10.55; availability of nitrogen 88; chlorine 0.7.

Remark: Nitrogen low.

6253. *Star Phosphate*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 0.50; total 14.50; available 14; phosphoric acid from acid phosphate. Found: Phosphoric acid soluble 12.14; reverted 3.07; insoluble 0.17; total 15.38; available 15.21.

6309. *Bone Meal*, Philippi Mill Co., Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble none; reverted 10; insoluble 14; total 24; available 10; nitrogen 2.47; phosphoric acid from animal bone; nitrogen all from animal bone. Found: Phosphoric acid, total 22.03; nitrogen 2.24; availability of nitrogen 91.

Remark: Phosphoric acid low; nitrogen low.

6333. *Phosphoric Acid and Potash*, R. Hunter, Agent,

Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 0.50; total 10.50; available 10; potash 5; phosphoric acid from acid phosphate; potash $\frac{2}{5}$ to $\frac{3}{5}$ kainit, $\frac{2}{5}$ to $\frac{3}{5}$ muriate of potash. Found: Phosphoric acid, soluble 6.37; reverted 3.48; insoluble 0.23; total 10.08; available 9.85; potash 4.86; chlorine 2.3.

Remark: Chlorine excessive.

6358. *Phosphate and Potash No. 2*, R. Hunter, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 0.50; total 8.50; available 8; potash 6; phosphoric acid from acid phosphate; potash $\frac{2}{5}$ to $\frac{3}{5}$ kainit, $\frac{2}{5}$ to $\frac{3}{5}$ muriate of potash. Found: Phosphoric acid, soluble 4.89; reverted 3.08; insoluble 0.13; total 8.10; available 7.97; potash 5.32; chlorine 2.8.

Remark: Source of potash equivalent to kainit.

6378. *Phosphate and Potash No. 2*, R. N. Stewart & Sons, Agents, Martinsburg, W. Va. Guarantee: (As above). Found: Phosphoric acid, soluble 4.62; reverted 2.82; insoluble 0.19; total 7.63; available 7.44; potash 5.15; chlorine 2.8.

Remark: Source of potash equivalent to kainit; phosphoric acid low.

6379. *Phosphate and Potash No. 1*, R. N. Stewart & Sons, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 0.50; total 10.50; available 10; potash 2; phosphoric acid from acid phosphate; potash $\frac{2}{5}$ to $\frac{3}{5}$ from kainit, $\frac{2}{5}$ to $\frac{3}{5}$ muriate of potash. Found: Phosphoric acid soluble 7.19; reverted 2.24; insoluble 0.23; total 9.66; available 9.43; potash 2.26; chlorine 2.6.

Remark: Source of potash equivalent to kainit.

6380. *Grain Grower*, R. N. Stewart & Sons, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 0.50; total 8.50; available 8; nitrogen 1.65; potash 2; phosphoric acid $\frac{2}{5}$ to $\frac{3}{5}$ acid phosphate, $\frac{2}{5}$ to $\frac{3}{5}$ animal bone meal; nitrogen 1-10 to 2-10 animal bone meal, 8-10 to 9-10 animal tankage; potash $\frac{1}{5}$ to $\frac{2}{5}$ muriate of potash, $\frac{2}{5}$ to $\frac{4}{5}$ kainit. Found: Phosphoric acid, soluble 4.53; reverted 3.15;

insoluble 0.67; total 8.35; available 7.68; nitrogen 1.46; potash 2.17; availability of nitrogen 84; chlorine 3.

Remark: Phosphoric acid low; nitrogen low; source of potash equivalent to kainit.

6418. *Wheat and Clover*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 5; phosphoric acid from acid phosphate; potash $\frac{1}{3}$ to $\frac{2}{3}$ from kainit, $\frac{1}{3}$ to $\frac{2}{3}$ from muriate. Found: Phosphoric acid, soluble 7.09; reverted 2.61; insoluble 0.47; total 10.17; available 9.70; potash 4.88; chlorine 2.7.

Remark: Source of potash equivalent to kainit. Phosphoric acid low.

BAUGH & SONS COMPANY,

Philadelphia, Pa., and Norfolk, Va.

6261. *Baugh's High Grade Acid Phosphate*, sent in for analysis by L. Riggleman, Reedsville, W. Va. Guarantee: Phosphoric acid, insoluble 1; total 15; available 14. Phosphoric acid from dissolved rock. Found: Phosphoric acid, soluble 12.52; reverted 2.64; insoluble 0.83; total 15.99; available 15.16.

6388. *Baugh's High Grade Acid Phosphate*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: (As above.) Found: Phosphoric acid, soluble 14.57; reverted 3.02; insoluble 0.10; total 17.69; available 17.59.

6262. *Baugh's Soluble Alkaline Superphosphate*, sent in for analysis by L. Riggleman, Reedsville, W. Va. Guarantee: Phosphoric Acid, insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved rock; potash from kainit. Found: Phosphoric acid, soluble 1.65; reverted 9.13; insoluble 0.90; total 11.68; available 10.78; potash 2.33; chlorine 3.2.

Remark: Chlorine excessive.

6360. *Baugh's Double Eagle \$25 Phosphate, a Raw Bone Superphosphate*, Offutt & Lakin, Agent, Terra Alta, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 10.50; available

8.50; nitrogen 1.65; potash 1; phosphoric acid from phosphate rock; nitrogen $\frac{2}{3}$ animal tankage, $\frac{1}{3}$ sulphate of ammonia; potash from kainit. Found: Phosphoric acid, soluble 5.69; reverted 3; insoluble 1.29; total 9.98; available 8.69; nitrogen 1.78; potash 1.32; availability of nitrogen 76; chlorine 3.2.

Remark: Chlorine excessive.

6372. *Baugh's General Crop Grower*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric Acid, insoluble 2; total 10; available 3; nitrogen 0.82; potash 1; phosphoric acid from phosphate rock; nitrogen $\frac{1}{2}$ animal tankage, $\frac{1}{2}$ garbage tankage; potash from kainit. Found: Phosphoric acid soluble 1.50; reverted 7.34; insoluble 2.56; total 11.40; available 8.84; nitrogen 1.13; potash 1.43; availability of nitrogen 78; chlorine 3.

6373. *Baugh's Export Bone with Potash*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric Acid, total, 11; nitrogen 1.65; potash 2; phosphoric acid from animal bone; nitrogen from animal bone; potash $\frac{1}{2}$ from muriate of potash, $\frac{1}{2}$ from kainit. Found: Phosphoric acid, total 11.72; nitrogen 2.02; potash 2.43; availability of nitrogen 91; chlorine 3.6.

Remark: Source of potash equivalent to kainit. Chlorine excessive.

6374. *Baugh's Pure Dissolved Animal Bones*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric Acid, insoluble 3; total 16; available 13; nitrogen 2.06; phosphoric acid from animal bone; nitrogen from animal bone. Found: Phosphoric acid, soluble 6.73; reverted 7.71; insoluble 0.45; total 14.89; available 14.44; nitrogen 2.44; availability of nitrogen 89.

6275. *Baugh's Complete Animal Bone Fertilizer*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Insoluble 2; total 10; available 8; nitrogen 1.65; potash 5; phosphoric acid from phosphate rock; nitrogen $\frac{2}{3}$ animal tankage, $\frac{1}{3}$ sulphate of ammonia; potash $\frac{1}{2}$ from muriate of potash, $\frac{1}{2}$ from kainit. Found: Phosphoric acid, soluble 2.80; reverted

5.55; insoluble 1.91; total 10.26; available 8.35; nitrogen 1.66; potash 5.15; availability of nitrogen 88; chlorine 1.8.

6376. *Baugh's 16% Acid Phosphate*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, insoluble 1; total 17; available 16. Phosphoric acid from dissolved rock. Found: Phosphoric acid, soluble 14.30; reverted 3; insoluble 0.18; total 17.48; available 17.30.

6389. *Baugh's Special Potato Manure*, N. C. Musgrave, Agent, Grafton, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 7; available 5; nitrogen 1.65; potash 10; phosphoric acid from phosphate rock; nitrogen $\frac{2}{3}$ animal tankage, $\frac{1}{3}$ sulphate of ammonia; potash from muriate of potash. Found: Phosphoric acid, soluble 2.02; reverted 3.44; insoluble 0.87; total 6.33; available 5.46; nitrogen 1.72; potash 10.42; availability of nitrogen 89; chlorine 1.2.

6392. *Baugh's Peninsula Grain Producer*, R. T. Lowndes, Agent, Clarksburg, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 10; available 8; nitrogen 1; potash 2. Phosphoric acid from phosphate rock; nitrogen $\frac{1}{2}$ animal tankage, $\frac{1}{2}$ garbage tankage; potash $\frac{1}{2}$ from muriate of potash and $\frac{1}{2}$ from kainit. Found: Phosphoric acid, soluble, 6.11; reverted 3.08; insoluble 2.04; total 11.23; available 9.19; nitrogen 1.80; potash 2.20; availability of nitrogen 82; chlorine 2.5.

Remark: Source of potash equivalent to kainit.

6393. *Baugh's Excelsior Guano*, West Virginia Implement Co., Agent, Elkins, W. Va. Guarantee: Phosphoric Acid, insoluble 2; total 10; available 8; nitrogen 1; potash 3; phosphoric acid from phosphate rock; nitrogen $\frac{1}{2}$ animal tankage, $\frac{1}{2}$ garbage tankage; potash $\frac{1}{2}$ muriate of potash, $\frac{1}{2}$ kainit. Found: Phosphoric acid, soluble 1.99; reverted 6.89; insoluble 1.30; total 10.18; available 8.88; nitrogen 1.06; potash 4.39; availability of nitrogen 57; chlorine 1.5.

6394. *Baugh's Raw Bone Meal Warranted Pure*, West Virginia Implement Co., Agent, Elkins, W. Va. Guarantee: Phosphoric acid, total 21.50; nitrogen 3.70; phosphoric acid

from animal bone; nitrogen from animal bone. Found: Phosphoric acid, total, 21.65; nitrogen 3.66; availability of nitrogen 62.

BOWKER'S FERTILIZER COMPANY,

Boston, New York and Cincinnati.

6395. *Bowker's Harvest Bone*, Orie Myers, Agent, Clarksburg, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 1; phosphoric acid from dissolved animal bone and phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid, soluble 5.19; reverted 3.24; insoluble 1.47; total 9.90; available 8.43; nitrogen 0.79; potash 1.31; availability of nitrogen 75; chlorine 6.2.

Remark: Chlorine excessive.

6396. *Bowker's Dissolved Bone & Potash*, Orie Myers, Agent, Clarksburg, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate rock; potash from kainit. Found: Phosphoric acid, soluble 5.59; reverted 4.30; insoluble 0.93; total 10.82; available 9.89; potash 2.08; chlorine 4.3.

Remark: Chlorine excessive.

6397. *Bowker's Potash Fertilizer*, Orie Myers, Agent, Clarksburg, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 5; phosphoric acid from dissolved phosphate rock; potash $\frac{1}{4}$ to $\frac{3}{4}$ muriate of potash; $\frac{1}{4}$ to $\frac{3}{4}$ manure salt. Found: Phosphoric acid, soluble 5.59; reverted 4.59; insoluble 0.98; reverted 11.16; available 10.18; potash 5.15; chlorine 2.

6425. *Bowker's Bone Meal*, Orie Myers, Agent, Clarksburg, W. Va. Guarantee: Phosphoric acid, total 25; nitrogen

1.23. Phosphoric acid from animal bone; nitrogen from animal bone. Found: Phosphoric acid, total 22.22; nitrogen 1.86; availability of nitrogen 93.

Remark: Phosphoric acid low.

GRIFFITH & BOYD COMPANY,

Baltimore, Md.

64.39. *Peerless Fertilizer*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 1; insoluble 1; total 9; available 8; nitrogen 0.29; potash 2; phosphoric acid from low grade bone tankage and rock almost entirely; nitrogen from low grade bone tankage; potash from kainit. Found: Phosphoric acid, soluble 5.59; reverted 3.88; insoluble 1.79; total 11.26; available 9.47; nitrogen 0.46; potash 2.46; availability of nitrogen 55; chlorine 3.4.

Remark: Chlorine excessive.

6440. *Gem Phosphate*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 5, reverted 1.50; insoluble 0.50; total 7; available 6.50; potash 3; phosphoric acid from rock; potash from kainit. Found: Phosphoric acid, soluble 4.83; reverted 3.92; insoluble 1.85; total 10.60; available 8.75; potash 2.98; chlorine 2.8.

6381. *XX Potash Manure*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 3; insoluble 1; total 11; available 10; potash 5; phosphoric acid from S. C. Rock; potash $\frac{1}{2}$ from muriate of potash, $\frac{1}{2}$ from kainit. Found: Phosphoric acid, soluble 6.84; reverted 3.46; insoluble 1.26; total 11.56; available 10.30; potash 4.93; chlorine 1.6.

6382. *Special Grain Grower*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric Acid, soluble 7; reverted 3; insoluble 1; total 11; available 10; potash 2; phosphoric acid from S. C. Rock; potash from kainit. Found:

Phosphoric acid, soluble 4.26; reverted 5.69; insoluble 2.04; total 11.99; available 9.95; potash 2.02; chlorine 3.4.

Remark: Chlorine excessive.

6377. *Farmer's Potato Manure*, T. P. Licklider, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 1; insoluble 1; total 9; available 8; nitrogen 85; potash 9; phosphoric acid $\frac{1}{3}$ S. C. Rock, $\frac{1}{3}$ low grade bone tankage, $\frac{1}{3}$ dissolved bone; nitrogen $\frac{1}{3}$ low grade bone tankage, $\frac{1}{3}$ dissolved bone, $\frac{1}{3}$ fish; potash $\frac{1}{2}$ muriate of potash, $\frac{1}{4}$ sulphate of potash, $\frac{1}{4}$ kainit. Found: Phosphoric acid, soluble 4.81; reverted 4.32; insoluble 1.50; total 10.63; available 9.13; nitrogen .87; potash 8.48; availability of nitrogen 83; chlorine 1.2.

Remark: Potash low.

S. M. HESS & BROTHER,

Philadelphia, Pa.

63124 *Soluble Bone*, F. A. Simpson, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14. Phosphoric acid from acid phosphate. Found: Phosphoric acid, soluble 11.83; reverted 3.64; insoluble 0.52; total 15.99; available 15.47.

6317. *Keystone Bone Phosphate*, F. A. Simpson, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 1; phosphoric acid from acid phosphate; nitrogen from animal tankage; potash from muriate of potash. Found: Phosphoric acid, soluble 4.94; reverted 3.12; insoluble 1; total 9.06; available 8.06; nitrogen 0.81; potash 1.18; availability of nitrogen 79; chlorine 6.5.

Remark: Chlorine excessive.

6318. *Soluble Bone and Potash*, F. A. Simpson, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from acid phosphate. Potash from Kainit. Found:

Phosphoric acid, soluble 5.69; reverted 3.99; insoluble 0.86; total 10.54; available 9.68; potash 2.02; chlorine 4.4.

Remark: Phosphoric acid low; chlorine excessive.

6341. *Emperor Phosphate*, F. A. Simpson, Agent, Philippi, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 1; phosphoric acid from acid phosphate; potash from kainit. Found: Phosphoric acid, soluble 6.51; reverted 3.90; insoluble 0.75; total 11.16; available 10.41; potash 1.29; chlorine 7.1.

Remark. Chlorine excessive.

THE HUBBARD FERTILIZER COMPANY.

Baltimore, Md.

6355. *Hubbard's Soluble Bone Phosphate*, C. E. Casler, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 4; insoluble 1.50; total 15.50; available 14; phosphoric acid from high grade Florida phosphate. Found: Phosphoric acid, soluble 12.95; reverted 3.82; insoluble 0.86; total 17.63; available 16.77.

6356. *Hubbard's Climax Bone Superphosphate*, C. E. Casler, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1; total 8; available 7; nitrogen 1; potash 4; phosphoric acid $\frac{3}{5}$ from high grade Florida phosphate $\frac{1}{5}$ tankage and $\frac{1}{5}$ from dissolved animal bone; nitrogen $\frac{1}{2}$ bone tankage and $\frac{1}{2}$ blood and animal matter; potash $\frac{1}{2}$ from sylvanit and $\frac{1}{2}$ from kainit. Found: Phosphoric acid, soluble 3.91; reverted 4.80; insoluble 1.23; total 9.94; available 8.71; nitrogen 1.06; potash 4.11; availability of nitrogen 66; chlorine 2.4.

6430. *Hubbard's Oriental Phosphate*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1; total 9; available 8; nitrogen 1; potash 2; phosphoric acid $\frac{3}{5}$ from high grade Florida phosphate and $\frac{1}{5}$ from tankings and $\frac{1}{5}$ from dissolved animal bone;

nitrogen $\frac{1}{2}$ bone tankings and $\frac{1}{2}$ blood and animal matter; potash $\frac{1}{2}$ from sylvanit and $\frac{1}{2}$ from kainit. Found: Phosphoric acid, soluble 1.54; reverted 6.60; insoluble 1.45; total 9.59; available 8.14; nitrogen 1.03; potash 3.02; availability of nitrogen 81; chlorine 3.4.

JARECKI CHEMICALL COMPANY.

Cincinnati, Ohio.

6275. *No. 1 Guano with Phosphate and Potash*, Damron Feed & Seed Co., Agent, Huntington, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 2; phosphoric acid from mineral phosphate bone and animal tankage; nitrogen from animal tankage; potash from muriate. Found: Phosphoric acid, soluble 5.32; reverted 3.69; insoluble 2.26; total 11.27; available 9.01; nitrogen 0.92; potash 2.09; availability of nitrogen 67; chlorine 0.7.

6339. *No. 1 Guano with Phosphate and Potash*, sent in for analysis by S. A. Leach & Son Co., Red House, W. Va. Guarantee: (as above). Found: Phosphoric acid soluble 5.37; reverted 4.08; insoluble 2.23; total 11.68; available 9.45; nitrogen 0.99; potash 2.12; availability of nitrogen 58; chlorine 0.8.

6296. *Raw Bone and Guano Mixture*, W. F. Sill, Agent, Pennsboro, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 3; insoluble 5; total 16; available 11; nitrogen 1.65; potash 1; phosphoric acid from bone and animal tankage; nitrogen from animal tankage and bone; potash from muriate. Found: Phosphoric acid, soluble 2.86; reverted 12.78; insoluble 4.76; total 20.40; available 15.64; nitrogen 1.88; potash 1.10; availability of nitrogen 85; chlorine 0.8.

6303. *Fish Phosphate and Potash Tobacco and Potato Food*, W. F. Sill, Agent, Pennsboro, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 4; phosphoric acid from mineral phosphate, bone and animal tankage; nitrogen from animal tankage;

potash from muriate. Found: Phosphoric acid, soluble 5.30; reverted 2.89; insoluble 2.07; total 10.26; available 8.19; nitrogen 0.91; potash 4.05; availability of nitrogen 71; chlorine 1.

6340. *Fish Phosphate and Potash Tobacco and Potato Food*, sent in for analysis by A. S. Leach & Sons Co., Red House, W. Va. Guarantee: (As above). Found: Phosphoric acid, soluble 4.82; reverted 2.99; insoluble 2.03; total 9.84; available 7.81; nitrogen 0.89; potash 4.21; availability of nitrogen 71; chlorine 1.

6304. *Acid Phosphate*, W. F. Sill, Agent, Pennsboro, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from phosphate rock. Found: Phosphoric acid, soluble 9.87; reverted 4.72; insoluble 1.80; total 16.39; available 14.59.

MARIETTA BONE & PHOSPHATE COMPANY,

Marietta, Ohio.

6282. *Potato and Truck Special*, C. F. Braumlich, Agent, Wheeling, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 10; available 8; nitrogen 2.05; potash 6; phosphoric acid from acid phosphate and animal tankage; nitrogen from animal tankage and nitrate of soda; potash from muriate. Found: Phosphoric acid, soluble 2.52; reverted 6.32; insoluble 1.78; total 10.62; available 8.84; nitrogen 1.46; potash 5.61; availability of nitrogen 92; chlorine 0.9.

Remark: Nitrogen low; potash low.

6283. *Acid Phosphate*, C. F. Braumlich, Agent, Wheeling, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 14; available 12; phosphoric acid from acid phosphate. Found: Phosphoric acid, soluble 10.69; reverted 3.12; insoluble 0.42; total 14.23; available 13.81.

6284. *Pure Raw Bone*, C. H. Becker, Agent, Wheeling, W. Va. Guarantee: Phosphoric acid, total 20; nitrogen 3.80;

phosphoric acid from bone; nitrogen from bone. Found: Phosphoric acid, total 20.46; nitrogen 3.90; availability of nitrogen 79.

THE MILLER FERTILIZER COMPANY,

Baltimore, Md.

6294. *Hustler Phosphate*, F. L. Beard, Agent, Marlinton, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1.50; total 9.50; available 8; nitrogen 0.83; potash 1; phosphoric acid $\frac{1}{6}$ from tankage, 5-6 from acid phosphate; nitrogen $\frac{1}{3}$ sulphate of ammonia, $\frac{4}{5}$ from 4 % tankage; potash from kainit. Found: Phosphoric acid, soluble 4.57; reverted 3.66; insoluble 0.69; total 8.92; available 8.23; nitrogen 0.95; potash 1.52; availability of nitrogen 77; chlorine 2.9.

6295. *M. B. S.*, F. L. Beard, Agent, Marlinton, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1.50; total 8.50; available 7; nitrogen 0.83; potash 3; phosphoric acid $\frac{1}{6}$ from tankage, 5-6 from acid phosphate; nitrogen $\frac{1}{3}$ from sulphate of ammonia, $\frac{4}{5}$ from 4 % tankage; potash from manure salt. Found: Phosphoric acid, soluble 3.62; reverted 6.09; insoluble 0.52; total 10.23; available 9.71; nitrogen 1.08; potash 3.42; availability of nitrogen 83; chlorine 3.3.

Remark: Source of potash equivalent to kainit; chlorine excessive.

6301. *W. G. Phosphate*, F. L. Beard, Agent, Marlinton, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1.50; total 8.50; available 7; nitrogen 0.42; potash 1; phosphoric acid $\frac{1}{3}$ from tankage, $\frac{4}{5}$ from acid phosphate, nitrogen from 4% tankage; potash from kainit. Found: Phosphoric acid soluble, 3.51; reverted 4.10; insoluble 0.36; total 7.97; available 7.61; nitrogen 0.54; potash 1.37; availability of nitrogen 69; chlorine 3.

6383. *Ammoniated Dissolved Bone*, Thomas Nuzum, Agent, Grafton, W. Va. Guarantee: Phosphoric acid, soluble 5, reverted 3, insoluble 1.50; total 9.50; available 8; nitrogen

1.65; potash 2; phosphoric acid $\frac{1}{3}$ from bone tankage, $\frac{2}{3}$ from acid phosphate; nitrogen $\frac{1}{3}$ from sulphate of ammonia, $\frac{2}{3}$ from bone tankage; potash $\frac{1}{2}$ from kainit, $\frac{1}{2}$ from manure salt. Found: Phosphoric acid, soluble, 5.01; reverted 3.25; insoluble 0.36; total 8.62; available 8.26; nitrogen 1.68; potash 2.19; availability of nitrogen 89; chlorine 3.

Remark: Source of potash equivalent to kainit.

6384. *Potato and Vegetable Grower*, Thomas Nuzum, Agent, Grafton, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1.50; total 9.50; available 8; nitrogen 1.65; potash 4; phosphoric acid, $\frac{1}{3}$ bone tankage, $\frac{2}{3}$ acid phosphate; nitrogen $\frac{1}{3}$ from sulphate of ammonia, $\frac{2}{3}$ from bone tankage; potash from manure salt. Found: Phosphoric acid, soluble, 3.93; reverted 4.07; insoluble 0.43; total 8.43; available 8; nitrogen 1.89; potash 4.52; availability of nitrogen 92; chlorine 1.6.

6407. *Clinch Phosphate*, Blue Grass Mill & Supply Co., Agent, Lewisburg, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 3; insoluble 1; total 11; available 10; potash 2; phosphoric acid from acid phosphate; potash from kainit. Found: Phosphoric acid, soluble 3.94; reverted 5.80; insoluble 0.43; total 10.17; available 9.74; potash 2.48; chlorine 2.7.

6408. *Farmers Profit*, Blue Grass Mill & Supply Co., Agent, Lewisburg, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1.50; total 9.50; available 8; nitrogen 0.83; potash 5; phosphoric acid $\frac{1}{6}$ from tankage; 5-6 from acid phosphate; nitrogen $\frac{1}{5}$ from sulphate of ammonia, $\frac{4}{5}$ from 4% tankage; potash $\frac{1}{2}$ from muriate of potash, $\frac{1}{2}$ from manure salts. Found: Phosphoric acid, soluble 3.98; reverted 4.71; insoluble 0.52; total 9.21; available 8.69; nitrogen 1.05; potash 8.10; availability of nitrogen 78; chlorine 1.7.

6409. *Standard Phosphate*, Blue Grass Mill & Supply Co., Agent, Lewisburg, W. Va. Guarantee: Phosphoric acid, soluble, 5; reverted 3; insoluble 1.50; total 9.50; available 8; nitrogen 2.47; potash 3. Phosphoric acid $\frac{1}{5}$ from bone tankage, $\frac{4}{5}$ from acid phosphate; nitrogen $\frac{1}{3}$ from sulphate of ammonia,

$\frac{2}{3}$ from bone tankage; potash from manure salts. Found: Phosphoric acid, soluble 3.51; reverted 4.85; insoluble 1.35; total 9.71; available 8.36; nitrogen 2.76; potash 3.24; availability of nitrogen 94; chlorine 2.

6411. *Club Brand*, Blue Grass Mill & Supply Co., Agent, Lewisburg, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1.50; total 9.50; available 8; nitrogen 0.42; potash 2; phosphoric acid $\frac{1}{5}$ from tankage, $\frac{4}{5}$ from acid phosphate; nitrogen from 4% tankage; potash $\frac{1}{2}$ from kainit, $\frac{1}{2}$ from manure salts. Found: Phosphoric acid, soluble 3.09; reverted 4.67; insoluble 0.33; total 8.09; available 7.73; nitrogen 0.54; potash 2.54; availability of nitrogen 71; chlorine 3.

Remark: Source of potash equivalent to kainit.

6410. *S. C. Rock*, Blue Grass Mill & Supply Co., Agent, Lewisburg, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 4; insoluble 1; total 15; available 14; phosphoric acid from phosphate rock. Found: Phosphoric acid, soluble 11.05; reverted 4.87; insoluble 0.79; total 16.71; available 15.92.

D. B. MARTIN COMPANY,

Philadelphia, Baltimore, and Montreal, Canada.

6438. *Martin's Pure Bone and Potash Compound Bull Head*, Washington, Alexander & Cook, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 6; insoluble 10; total 16; available 6; nitrogen 1.65; potash 2.50; phosphoric acid from pure animal bone; nitrogen from pure animal bone; potash from muriate of potash. Found: Phosphoric acid, soluble 1.81; reverted 8; insoluble 4.64; total 14.45; available 9.81; nitrogen 2.99; potash 3.11; availability of nitrogen 92; chlorine 2.3.

Remark: Source of potash equivalent to manure salt.

G. OBER & SONS COMPANY,

Baltimore, Md.

6362. *Ober's Dissolved Bone Phosphate*, R. N. Stewart &

Son, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 11; reverted 3; insoluble 1; total 15; available 14; phosphoric acid from high grade Florida phosphate. Found: phosphoric acid soluble 11.99; reverted 3.95; insoluble 0.37; total 16.31; available 15.94.

6398. *Ober's Dissolved Bone Phosphate and Potash*, W. A. Streets, Agent, Belington, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from high grade Florida phosphate; potash from sulphate of potash. Found: Phosphoric acid, soluble 8.47; reverted 2.57; insoluble 0.94; total 11.98; available 11.04; potash 2.16; chlorine 1.6.

Remark: Source of potash equivalent to manure salt.

6361. *Ober's Dissolved Bone Phosphate and Potash*, R. N. Stewart & Son, Agent, Martinsburg, W. Va. Guarantee: (As above). Found: Phosphoric acid, soluble 7.55; reverted 3.16; insoluble 0.73; total 11.44; available 10.71; potash 2.05; chlorine 2.5.

Remark: Source of potash equivalent to kainit.

6399. *Ober's Stag Guano*, W. A. Streets, Agent, Belington, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 4; phosphoric acid from high grade Florida phosphate $\frac{7}{8}$, bone tankage and fish $\frac{1}{8}$; nitrogen from high grade bone and blood tankage $\frac{1}{3}$ to $\frac{1}{2}$, nitrate of soda $\frac{1}{3}$ to $\frac{1}{2}$, fish $\frac{1}{3}$ to $\frac{1}{2}$; potash from sulphate of potash. Found: Phosphoric acid, soluble 5.63; reverted 2.50; insoluble 0.77; total 8.90; available 8.13; nitrogen 1.23; potash 4.08; availability of nitrogen 91; chlorine 1.8.

Remark: Source of potash equivalent to manure salt.

6404. *Ober's Dissolved Bone Phosphate*, sent in for analysis by J. H. Dutterer, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 11; reverted 3; insoluble 1; total 15; available 14; phosphoric acid from high grade Florida phosphate. Found: Phosphoric acid, soluble 12.52; reverted 2.56; insoluble 1.55; total 16.63; available 15.08.

6422. *Ober's Standard Potash Compound*, R. N. Stewart & Son, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 2; insoluble 1; total 13; available 12; potash 5. Phosphoric acid from high grade Florida phosphate; potash from muriate of potash. Found: Phosphoric acid, soluble 9.45; reverted 3.54; insoluble 1.21; total 14.20; available 12.99; potash 5.63; chlorine 1.4.

6423. *Ober's High Grade Acid Phosphate*, R. N. Stewart & Son, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, soluble 14.50; reverted 1.50; insoluble 1; total 17; available 16; phosphoric acid from high grade Florida phosphate. Found: phosphoric acid, soluble 13.38; reverted 4.67; insoluble 0.93; total 18.98; available 18.05.

6424. *Ober's Farmers' Mixture*, G. M. Haines, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1; total 10; available 9; nitrogen 0.82; potash 2; phosphoric acid from high grade Florida phosphate 8-9, bone tankage and fish 1-9; nitrogen from high grade bone and blood tankage $\frac{1}{2}$ to $\frac{3}{4}$, fish $\frac{1}{2}$ to $\frac{3}{4}$; potash from sulphate of potash. Found: Phosphoric acid, soluble 6.11; reverted 4; insoluble 1.26; total 11.37; available 10.11; nitrogen 1.21; potash 2.19; availability of nitrogen 90; chlorine 1.4.

Remark: Source of potash equivalent to muriate.

PIEDMONT MT. AIRY GUANO COMPANY,

Baltimore, Md.

6269. *Piedmont Potato Producer*, G. W. Niswander & Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 7; available 5; nitrogen 2.09; potash 6; phosphoric acid from dissolved bone and phosphate rock; nitrogen $\frac{1}{3}$ bone tankage, $\frac{1}{3}$ nitrate of soda and $\frac{1}{3}$ blood; potash from high grade muriate of potash. Found: Phosphoric acid, soluble, 3.71; reverted 1.53; insoluble 0.35; total 5.59; available 5.24; nitrogen 2; potash 5.12; availability of nitrogen 96; chlorine 1.6.

Remark. Potash low; source of potash equivalent to manure salt.

6280. *Piedmont Potato Producer*, H. C. Madera, Agent, Morgantown, W. Va. Guarantee: (As above). Found: Phosphoric acid, soluble 3.99; reverted 2.02; insoluble 0.26; total 6.27; available 6.01; nitrogen 2.50; potash 5.08; availability of nitrogen 88; chlorine 1.5.

Remark: Potash low; Source of potash equivalent to manure salts.

6270. *Piedmont Special Potash Mixture*, G. W. Niswander & Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, insoluble 1; total 11; available 10; potash 5; phosphoric acid from dissolved phosphate rock; potash $\frac{1}{2}$ from muriate of potash, $\frac{1}{2}$ kainit. Found: Phosphoric acid, soluble 9.76; reverted 1.07; insoluble 0.10; total 10.93; available 10.83; potash 4.27; chlorine 1.9.

Remark: Potash low.

6271. *Levering's Excelsior*, G. W. Niswander & Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, insoluble 1; total 9; available 8; nitrogen 0.82; potash 1; phosphoric acid from dissolved phosphate rock and dissolved bone tankage; nitrogen $\frac{1}{2}$ from blood, $\frac{1}{2}$ from bone tankage; potash $\frac{1}{2}$ from muriate of potash, $\frac{1}{2}$ kainit. Found: Phosphoric acid, soluble 6.22; reverted 1.59; insoluble 0.28; total 8.09; available 7.81; nitrogen 0.52; potash 0.97; availability of nitrogen 72, chlorine 4.3.

Remark: Nitrogen low; source of potash equivalent to kainit; chlorine excessive.

6272. *Piedmont Pure Raw Bone Mixture*, G. W. Niswander & Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, insoluble 4; total 12; available 8; nitrogen 1.02; potash 2; phosphoric acid from dissolved bone tankage; nitrogen from bone tankage; potash $\frac{1}{2}$ from kainit and $\frac{1}{2}$ from muriate. Found: Phosphoric acid, soluble 3.70; reverted 4.68; insoluble 1.96; total 10.34; available 8.37; nitrogen 0.97; potash 2.46; availability of nitrogen 88; chlorine 3.1.

Remark: Source of potash equivalent to kainit. Chlorine excessive.

6273. *Pure Raw Bone Meal*, G. W. Niswander & Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, insoluble 3; total 23; available 20; nitrogen 3.70; phosphoric acid from bone; nitrogen from raw bone. Found: Phosphoric acid, total 23.03; nitrogen 4.01; availability of nitrogen 60.

6279. *Piedmont High Grade S. C. Bone*, H. C. Madera, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, insoluble 1; total 15; available 14; phosphoric acid from S. C. Rock. Found: Phosphoric acid, soluble 14.64; reverted 1.51; insoluble 0.12; total 16.27; available 16.15.

6299. *Piedmont Farmers High Grade Bone and Potash*, G. W. Niswander & Co., Agent, Parkersburg, W. Va. Guarantee: Phosphoric acid, insoluble 2; total 12; available 10; potash 2; phosphoric acid from S. C. rock; potash from kainit. Found: Phosphoric acid soluble 6.92; reverted 1.83; insoluble 0.36; total 9.10; available 8.74; potash 2.03; chlorine 2.9.

Remark: Phosphoric acid low.

THE PERUVIAN GUANO CORPORATION,

Charleston, S. C.

6433. *Ex. S. S. Belle of Scotland Genuine Peruvian Guano*, R. N. Stewart & Son, Agent, Martinsburg, W. Va. Guarantee: Phosphoric acid, insoluble 1.50; total 10; available 8.50; nitrogen 4.11; potash 2; phosphoric acid from bird manure; nitrogen from bird manure; potash from bird manure. Found: Phosphoric acid, soluble 2.12; reverted 7.74; insoluble 1.47; total 11.33; available 9.86; nitrogen 3.69; potash 1.86; availability of nitrogen 96; chlorine 0.6.

Remark: Nitrogen low.

RAMSBURG FERTILIZER COMPANY,

Frederick, Maryland.

6445. *Soluble Alkaline Bone*, Washington, Alexander &

Cook, Agent, Charlestown, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 22; insoluble 1; total 13; available 12; potash 3; phosphoric acid from Tennessee rock phosphate; potash $\frac{1}{2}$ from manure potash salts, $\frac{1}{2}$ German kainit. Found: Phosphoric acid, soluble 5.42; reverted 9.48; insoluble 1.77; total 16.67; available 14.90; potash 3.20; chlorine 0.9.

RASIN-MONUMENTAL COMPANY,

Baltimore, Md.

6446. *Seawall Special*, G. M. Haines, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; phosphoric acid from high grade Charleston, Florida and Tennessee Phosphate. Found: Phosphoric acid, soluble 8.70; reverted 2.43; insoluble 1.29; total 12.42; available 11.13.

6244. *Rasin's XXX Fertilizer*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 5; phosphoric acid from high grade Charleston, Tennessee and Florida phosphate; nitrogen $\frac{1}{5}$ to $\frac{1}{4}$ high grade fish, $\frac{1}{3}$ to $\frac{1}{2}$ high grade tankage, $\frac{1}{6}$ to $\frac{1}{5}$ blood, 1-6 to $\frac{1}{5}$ high grade sulphate of ammonia; potash $\frac{1}{2}$ to $\frac{2}{3}$ high grade muriate of potash, $\frac{1}{2}$ to $\frac{1}{3}$ genuine German kainit. Found: Phosphoric acid, soluble 5.85; reverted 2.10; insoluble 1.62; total 9.57; available 7.95; nitrogen 2.42; potash 6.27; availability of nitrogen 85; chlorine 0.2.

6245. *Monumental Potato Manure*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; nitrogen 1.65; potash 7; phosphoric acid from high grade Charleston, Tennessee and Florida phosphate; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ high grade fish, $\frac{1}{4}$ to $\frac{1}{2}$ high grade tankage; potash 9-10 sulphate of potash, 1-10 muriate of potash. Found: Phosphoric acid, soluble 1.47; reverted 4.35; insoluble 1.09; total 6.91; available

5.82; nitrogen 1.93; potash 7.67; availability of nitrogen 90; chlorine 0.5.

6246. *Special Formula for Corn and Buckwheat*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; potash 3; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate; potash $\frac{1}{4}$ to $\frac{1}{2}$ from genuine German kainit; $\frac{1}{2}$ to $\frac{3}{4}$ high grade muriate of potash. Found: Phosphoric acid, soluble 3.17; reverted 3.13; insoluble 0.75; total 7.05; available 6.30; potash 3.50; chlorine 0.7.

6247. *Rasin's Wheat Potash Mixture*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; potash 5; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate; potash $\frac{1}{2}$ to $\frac{2}{3}$ high grade muriate of potash $\frac{1}{3}$ to $\frac{1}{2}$ genuine German kainit. Found: Phosphoric acid, soluble 4.72; reverted 4.25; insoluble 1.19; total 10.16; available 8.97; potash 4.80; chlorine 1.6.

6248. *Rasin's Acid Phosphate*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate. Found: Phosphoric acid, soluble 11.74; reverted 3.06; insoluble 0.32; total 15.12; available 14.80.

6249. *Pure Raw Bone*, W. H. Bailey & Sons, Agent, Morgantown, W. Va. Guarantee: Phosphoric acid, total 21.50; nitrogen 3.71; phosphoric acid from animal bone; nitrogen from animal bone. Found: Phosphoric acid, total 23.69; nitrogen 4.01; availability of nitrogen 76.

6281. *William Penn Crop Grower*, Wheeling Implement Co., Agent, Wheeling, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 1; phosphoric acid from High Grade Charleston, Florida and Tennessee phosphate; nitrogen $\frac{1}{5}$ to $\frac{1}{4}$ high grade tankage, $\frac{1}{3}$ to $\frac{1}{2}$ high grade fish, $\frac{1}{6}$ to $\frac{1}{5}$ blood, $\frac{1}{6}$ to $\frac{1}{5}$ sulphate of ammonia; potash $\frac{1}{2}$ to $\frac{2}{3}$ from high grade muriate of

potash and $\frac{1}{3}$ to $\frac{1}{2}$ from genuine German kainit. Found: Phosphoric acid, soluble 6.77; reverted 2.28; insoluble 2.37; total 11.42; available 9.05; nitrogen 1.01; potash 1.61; availability of nitrogen 74; chlorine 0.3.

6327. *Rasin's Royal Fish, Bone and Potash*, A. P. Russell & Co., Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 3; phosphoric acid from high grade Charleston, Tennessee and Florida phosphate; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ high grade fish, $\frac{1}{4}$ to $\frac{1}{3}$ high grade tankage, $\frac{1}{5}$ to $\frac{1}{3}$ animal bone; potash $\frac{1}{2}$ to $\frac{2}{3}$ high grade muriate, $\frac{1}{3}$ to $\frac{1}{2}$ genuine German kainit. Found: Phosphoric acid, soluble 5.59; reverted 2.36; insoluble 2.09; total 10.04; available 7.95; nitrogen 1.63; potash 3.58; availability of nitrogen 86; chlorine 0.8.

6328. *Rasin's Special Bone and Potash*, A. P. Russell & Co., Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 5; phosphoric acid from high grade Charleston, Tennessee and Florida Phosphate; potash $\frac{1}{2}$ to $\frac{2}{3}$ high grade muriate of potash; $\frac{1}{3}$ to $\frac{1}{2}$ genuine German kainit. Found: Phosphoric acid, soluble 3.75; reverted 5.97; insoluble 1.33; total 11.05; available 9.72; potash 5.85; chlorine 1.5.

6353. *Rasin's Vegetable Special*, Washington, Alexander, & Cook, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 10; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate; nitrogen $\frac{1}{4}$ to $\frac{3}{4}$ high grade fish, $\frac{1}{4}$ to $\frac{1}{2}$ high grade tankage; potash 9-10 high grade sulphate of potash 1-10 from high grade muriate of potash. Found: Phosphoric acid, soluble 6.09; reverted 2.42; insoluble 1.01; total 9.52; available 8.51; nitrogen 2.04; potash 10.09; availability of nitrogen 89; chlorine 0.04.

6354. *Rasin's Special Fish and Potash Mixture*, Washington, Alexander & Cook, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; nitrogen 1.65; potash 3; phosphoric acid from

high grade Charleston, Tennessee and Florida phosphate; nitrogen $\frac{1}{2}$ to $\frac{3}{4}$ high grade fish, $\frac{1}{4}$ to $\frac{1}{3}$ high grade tankage, $\frac{1}{3}$ to $\frac{1}{3}$ animal bone; potash $\frac{1}{2}$ to $\frac{2}{3}$ high grade muriate, $\frac{1}{3}$ to $\frac{1}{2}$ genuine German kainit. Found; Phosphoric acid, soluble 6.04; reverted 2.04; insoluble 0.73; total 8.81; available 8.08; nitrogen 1.79; potash 3.21; availability of nitrogen 83; chlorine 1.

6419. *Rasin's Half and Half Mixture*, G. M. Haines, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; potash 3; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate; potash $\frac{1}{4}$ to $\frac{1}{2}$ genuine German kainit, $\frac{1}{2}$ to $\frac{3}{4}$ high grade muriate of potash. Found: Phosphoric acid, soluble 3.28; reverted 3.65; insoluble 0.60; total 7.53; available 6.93; potash 3.50; chlorine 1.6.

6420. *Rasin's Empire Guano*, G. M. Haines, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 2; phosphoric acid from high grade Charleston, Tennessee and Florida phosphate; nitrogen $\frac{1}{3}$ to $\frac{1}{4}$ high grade fish, $\frac{1}{3}$ to $\frac{1}{2}$ high grade tankage, $\frac{1}{6}$ to $\frac{1}{5}$ blood, $\frac{1}{6}$ to $\frac{1}{5}$ sulphate of ammonia; potash $\frac{1}{2}$ to $\frac{2}{3}$ high grade muriate, $\frac{1}{3}$ to $\frac{1}{2}$ genuine German kainit. Found: Phosphoric acid, soluble 4.90; reverted 2.88; insoluble 1.53; total 9.31; available 7.78; nitrogen 1.79; potash 2.07; availability of nitrogen 68; chlorine 1.6.

6322. *Washington, Alexander & Cook's Regular Corn Mixture*, Washington, Alexander & Cook, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 3; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate; potash $\frac{1}{2}$ to $\frac{2}{3}$ from high grade muriate of potash, $\frac{1}{3}$ to $\frac{1}{2}$ genuine German kainit. Found: Phosphoric acid, soluble 6.93; reverted 3.14; insoluble 1.47; total 11.54; available 10.07; potash 2.90; chlorine 1.6.

6326. *Rasin's Irish Potato Special*, A. P. Russell & Co., Agent, Buckhannon, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 2; insoluble 1; total 8; available 7; nitrogen

3.29; potash 8; phosphoric acid from high grade Charleston, Florida and Tennessee phosphate; nitrogen $\frac{1}{4}$ to $\frac{1}{2}$ high grade fish, $\frac{1}{4}$ to $\frac{1}{2}$ high grade tankage, $\frac{1}{4}$ to $\frac{1}{2}$ sulphate of ammonia; potash 9-10 from sulphate of potash, 1-10 from muriate of potash. Found: Phosphoric acid, soluble 4.58; reverted 2.34; insoluble 0.91; total 7.83; available 6.92; nitrogen 3.54; potash 7.92; availability of nitrogen 95; chlorine mere trace.

SOUTHERN FERTILIZING COMPANY.

York, Pa., and Baltimore, Md.

6335. *Farmers Mixture*, W. C. Hovemale, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate rock; potash $\frac{1}{4}$ to $\frac{3}{4}$ from manure salt, $\frac{1}{4}$ to $\frac{3}{4}$ kainit. Found: Phosphoric acid, acid, soluble 6.17; reverted 3.95; insoluble 0.88; total 11; available 10.12; potash 2.19; chlorine 4.4.

Remark: Chlorine excessive.

6336. *General Crop Grower*, W. C. Hovemale, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.41; potash 2; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, nitrogen $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid soluble 3.71; reverted 4.02; insoluble 1.05; total 8.78; available 7.73; nitrogen 0.49; potash 2.17; availability of nitrogen 65; chlorine 4.9.

Remark: Chlorine excessive.

6337. *Farmers Choice*, W. C. Hovemale, Agent, Berkeley Springs, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1; total 10; available 9; nitrogen 0.82; potash 2; phosphoric acid from dissolved animal bone and dissolved phosphate rock; nitrogen 1-10 to $\frac{1}{4}$ garbage tankage, $\frac{3}{4}$ to 9-10 animal tankage; potash from kainit. Found: Phosphoric acid,

soluble 5.77; reverted 3.51; insoluble 1.25; total 10.53; available 9.28; nitrogen 0.94; potash 2.09; availability of nitrogen 85; chlorine 4.3.

Remark: Chlorine excessive.

6417. *Special for All Crops*, W. H. Wilson, Agent, Romney, W. Va. Guarantee: According to American Agricultural Chemical Co's. Affidavit: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 6; phosphoric acid from dissolved phosphate rock; potash from muriate. Found: Phosphoric acid, soluble 7.14; reverted 4.02; insoluble 0.82; total 11.98; available 11.16; potash 5.63; chlorine 2.2.

Remark: Potash low; source of potash equivalent to manure salt.

6448. *Dissolved Bone Phosphate*, John Burg, Agent, Keyser, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 12.54; reverted 3.21; insoluble 0.22; total 15.97; available 15.75.

SMITH AGRICULTURAL CHEMICAL COMPANY,

Columbus, Ohio.

6432. *Ohio Farmers Wheat Maker and Seeding Down*, Chester Hardware Co., Agent, Chester, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1; total 9; available 8; potash 2; nitrogen 0.82; phosphoric acid from dissolved phosphate rock and dissolved animal matter; nitrogen from animal tankage; potash from muriate. Found: Phosphoric acid, soluble 0.92; reverted 7.57; insoluble 2.07; total 10.56; available 8.49; nitrogen 0.91; potash 2.36; availability of nitrogen 77; chlorine 0.9.

6441. *Ohio Farmers Soluble Phosphate and Potash*, Chester Hardware Co., Agent, Chester, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 3; insoluble 1; total 11; available 10; potash 2; phosphoric acid from dissolved phosphate

rock; Potash from muriate. Found: Phosphoric acid, soluble 0.57; reverted 10.57; insoluble 2.23; total 13.37; available 11.14; potash 2.11; chlorine 2.0.

Remark: Source of potash equivalent to manure salt.

6442. *Ohio Farmers Alkaline Phosphate*, Chester Hardware Co., Agent, Chester, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 4; insoluble 1; total 15; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 8.90; reverted 6.45; insoluble 2.23; total 17.58; available 15.35.

D. A. THOMAS AND COMPANY,

Hagerstown, Md.

6323. *Thomas's Bone and Potash Mixture*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 2; phosphoric acid from high grade acid phosphate; nitrogen $\frac{1}{4}$ from high grade animal tankage, $\frac{3}{4}$ from high grade garbage tankage; potash from kainit. Found: Phosphoric acid, soluble 7.24; reverted 2.40; insoluble 0.58; total 10.22; available 9.64; nitrogen 1.66; potash 3.18; availability of nitrogen 87; chlorine 2.7.

6324. *Soluble Bone and Potash*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 2; phosphoric acid from acid phosphate; potash from kainit. Found: Phosphoric acid, soluble 8.06; reverted 3.20; insoluble 0.77; total 12.03; available 11.26; potash 2.32; chlorine 2.9.

6349. *Crown Jewel*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1; total 10; available 9; nitrogen 0.82; potash 3. Phosphoric acid from high grade acid phosphate; nitrogen from high grade garbage tankage; potash from kainit. Found: Phosphoric acid, soluble 6.51; reverted 2.99; insoluble 0.54; total

10.04; available 9.50; nitrogen 0.88; potash 2.93; availability of nitrogen 82; chlorine 1.2.

6350. *Dissolved Bone Phosphate*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 11; reverted 3; insoluble 1; total 15; available 14; phosphoric acid from high grade phosphate rock. Found: Phosphoric acid, soluble 15.03; reverted 2.24; insoluble 0.23; total 17.50; available 17.27.

6351. *Farmers Wheat and Grass Mixture*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 0.82; potash 2; phosphoric acid from high grade acid phosphate; nitrogen from garbage tankage; potash from kainit. Found: Phosphoric acid, soluble 5.21; reverted 2.68; insoluble 0.49; total 8.38; available 7.89; nitrogen 0.83; potash 2.90; availability of nitrogen 83; chlorine 2.

6352. *Excelsior Compound*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 1; total 9; available 8; nitrogen 1.65; potash 4; phosphoric acid from high grade acid phosphate; nitrogen $\frac{1}{3}$ from high grade animal tankage, $\frac{2}{3}$ from high grade garbage tankage; potash $\frac{3}{4}$ from kainit and $\frac{1}{4}$ from high grade muriate of potash. Found: Phosphoric acid, soluble 6.18; reverted 2.35; insoluble 0.46; total 8.99; available 8.53; nitrogen 1.61; potash 3.91; availability of nitrogen 90; chlorine 1.7.

6435. *Harvest Triumph*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 3; insoluble 1; total 14; available 13; nitrogen 1.23; potash 2.50; phosphoric acid from high grade acid phosphate; nitrogen $\frac{1}{3}$ from animal tankage, $\frac{1}{3}$ high grade garbage tankage, $\frac{1}{3}$ nitrate of soda; potash $\frac{1}{2}$ from kainit and $\frac{1}{2}$ from muriate of potash. Found: Phosphoric acid, soluble 11.33; reverted 2.24; insoluble 0.47; total 14.04; available 13.57; nitrogen 1.13; potash 2.91; availability of nitrogen 95; chlorine 0.8.

6436. *Thomas's Fine Raw Bone*, J. C. and W. M. Burns, Agent, Charles Town, W. Va. Guarantee: Phosphoric acid, to-

tal 20; nitrogen 3.70; phosphoric acid from animal bone; nitrogen from animal bone. Found: Phosphoric acid, total 22.37; nitrogen 4.03; availability of nitrogen 81.

6403. *Dissolved Bone Phosphate*, sent in for analysis by J. H. Dutterer, Charles Town, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 4; insoluble 1; total 17; available 16; phosphoric acid from high grade phosphate rock. Found: Phosphoric acid, soluble 11.86; reverted 5.63; insoluble 0.24; total 17.73; available 17.49.

VIRGINIA-CAROLINA CHEMICAL COMPANY,

Baltimore, Md., and Richmond, Va.

6401. *Virginia Carolina Chemical Co's. 16% Acid Phosphate*, sent in for analysis by J. H. Chewing, Red Sulphur Springs, W. Va. Guarantee: Phosphoric acid, soluble 13; reverted 3; insoluble 1; total 17; available 16; phosphoric acid from high grade S. C. phosphate rock. Found: Phosphoric acid, soluble 10.98; reverted 6.88; insoluble 1.10; total 18.96; available 17.86.

6413. *V. C. C. Co's Royal Acid Phosphate*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; phosphoric acid from dissolved Florida and Tennessee phosphate. Found: Phosphoric acid, soluble 9.17; reverted 2.28; insoluble 0.64; total 12.09; available 11.45.

6415. *Virginia-Carolina Chemical Co's. Pure Raw Bone*, J. M. Miller & Bros., Agent, Ronceverte, W. Va. Guarantee: Phosphoric acid, total 21.50; nitrogen 3.71; Phosphoric acid from animal bone; nitrogen from pure animal bone. Found: Phosphoric acid, total 22.58; nitrogen 4.21; availability of nitrogen 92.

6416. *V. C. C. Co's. Special Bone and Potash*, J. M. Miller & Bro., Agent, Ronceverte, W. Va. Guarantee: Phosphoric acid, soluble 8; reverted 2; insoluble 1; total 11; available 10; potash 5; phosphoric acid from Charleston, Florida and Ten-

nessee phosphate; potash $\frac{1}{2}$ to $\frac{2}{3}$ from High Grade Muriate of Potash, $\frac{1}{3}$ to $\frac{1}{2}$ from genuine German kainit. Found: Phosphoric acid, soluble 7.78; reverted 2.60; insoluble 1.10; total 11.48; available 10.38; potash 4.62; chlorine 0.8.

Remark: Potash low.

6449. *Allison & Addison's Standard Acid Phosphate*, New River Milling Co., Agent, Hinton, W. Va. Guarantee: Phosphoric acid, soluble 9; reverted 3; insoluble 1; total 13; available 12; phosphoric acid from high grade S. C. Phosphate rock, Found: Phosphoric acid, soluble 1.53; reverted 11.01; insoluble 2.05; total 15.49; available 12.54.

6437. *Allison & Addison's Star Brand Guano*, J. M. Miller & Bro., Agent, Ronceverte, W. Va. Guarantee: Phosphoric acid, soluble 6; reverted 2; insoluble 2; total 10; available 8; nitrogen 1.65; potash 1; phosphoric acid from high grade S. C. phosphate; nitrogen $\frac{1}{2}$ from high grade animal tankage and $\frac{1}{2}$ from high grade dry fish; potash $\frac{1}{2}$ kainit, $\frac{1}{2}$ muriate. Found: Phosphoric acid, soluble 5.59; reverted 2.10; insoluble 1.29; total 8.98; available 7.69; nitrogen 2.11; potash 1.79; availability of nitrogen 92; chlorine 3.

Remark: Source of potash equivalent to kainit. Phosphoric acid low.

6414. *Allison & Addison's B. P. Potash Mixture*, J. M. Miller & Bro., Agent, Ronceverte, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 3; insoluble 1; total 11; available 10; potash 2. Phosphoric acid from high grade S. C. phosphate rock; potash $\frac{1}{2}$ from kainit, $\frac{1}{2}$ from muriate. Found: Phosphoric acid, soluble 5.52; reverted 4.28; insoluble 1.25; total 11.05; available 9.80; potash 2.08; chlorine 2.2.

Remark: Source of potash equivalent to manure salts.

6421. *Cooper's Special Wheat Grower*, H. C. Cooper, Agent, Romney, W. Va. Guarantee: Phosphoric acid, soluble 4; reverted 2; insoluble 1; total 7; available 6; potash 3; phosphoric acid from Charleston, Florida and Tennessee phosphate; potash $\frac{1}{2}$ to $\frac{3}{4}$ from high grade muriate of potash, $\frac{1}{4}$ to $\frac{1}{2}$ genuine German kainit. Found: Phosphoric acid, soluble 1.68;

reverted 3.77; insoluble 0.48; total 5.95; available 5.45; potash 3.11; chlorine 1.4.

Remark: Phosphoric acid low.

6412. *S. W. Travers & Co's. Dissolved Bone Phosphate.* J. M. Miller & Bro., Agent, Ronceverte, W. Va. Guarantee: Phosphoric acid, soluble 11; reverted 3; insoluble 1; total 15; available 14; Phosphoric acid from high grade S. C. phosphate rock. Found: Phosphoric acid, soluble 12.45; reverted 3.38; insoluble 0.68; total 16.51; available 15.83.

THE ROBERT A. WOOLDRIDGE CO.,

No. 8 Light St., Baltimore, Md.

6286. *Old Sledge Phosphate*, Bolby Bros., Agent, Van Voorhis, W. Va. Guarantee: Phosphoric acid, soluble 10; reverted 2; insoluble 1; available 12; potash 5. Phosphoric acid from dissolved phosphate rock; potash $\frac{3}{5}$ manure salt, $\frac{2}{5}$ muriate of potash. Found: Phosphoric acid, soluble 7.75; reverted 4.36; insoluble 0.82; total 12.93; available 12.11; potash 5.49; chlorine 1.7.

6287. *High Grade Acid Phosphate 16%*, Bolby Bros., Agent, Van Voorhis, W. Va. Guarantee: Phosphoric acid, soluble 13; reverted 3; insoluble 1.50; available 16; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 15.25; reverted 2.50; insoluble 0.33; total 18.07; available 17.75.

6288. *Florida Acid Phosphate*, Bolby Bros., Agent, Van Voorhis, W. Va. Guarantee: Phosphoric acid, soluble 12; reverted 2; insoluble 1.50; available 14; phosphoric acid from dissolved phosphate rock. Found: Phosphoric acid, soluble 12.13; reverted 3.80; insoluble 0.47; total 16.40; available 15.93.

6289. *Special Potato and Tobacco Fertilizer*, Bolby Bros., Agent, Van Voorhis, W. Va. Guarantee: Phosphoric acid, soluble 7; reverted 2; insoluble 1.50; available 9; nitrogen 1.64; potash 5; phosphoric acid $\frac{3}{4}$ from dissolved phosphate rock, $\frac{1}{4}$

from bone tankage; nitrogen $\frac{2}{5}$ from fish, $\frac{3}{5}$ from bone tankage; potash $\frac{1}{2}$ from muriate, $\frac{1}{2}$ from high grade manure salts. Found: Phosphoric acid, soluble 7.71; reverted 2.23; insoluble 1.16; total 11.10; available 9.94; nitrogen 1.80; potash 4.80; availability of nitrogen 88; chlorine 1.1.

6290. *Muriate of Potash*, Bolby Bros. Agent, Van Voorhis, W. Va. Guarantee: Potash 49; potash from muriate of potash. Found: Potash 54.10; chlorine 0.8.

6291. *High Grade Sulphate of Potash*, Bolby Bros., Agent, Van oVorhis, W. Va. Guarantee: Potash 49; potash from sulphate of potash. Found: Potash 51.55; chlorine 0.02.

6431. *Tiger Bone Stock Phosphate*, M. C. Cochran, Agent, Worthington, W. Va. Guarantee: Phosphoric acid, soluble 5; reverted 3; insoluble 1.50; total 9.50; available 8; nitrogen 1.03; potash 4.50; phosphoric acid, $\frac{3}{4}$ from acid phosphate, $\frac{1}{4}$ from dissolved bone tankage; nitrogen $\frac{3}{4}$ from animal bone and bone tankage, $\frac{1}{4}$ from sulphate of ammonia; potash from muriate of potash. Found: Phosphoric acid, soluble 4.27; reverted 4; insoluble 0.51; total 8.78; available 8.27; nitrogen 1.10; potash 5.30; availability of nitrogen 80; chlorine 1.8.

Remark: Source of potash equivalent to manure salt.



